

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 1 111 213 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

27.06.2001 Bulletin 2001/26

(51) Int Cl.7: F01N 7/18

(21) Application number: 99830785.4

(22) Date of filing: 21.12.1999

(84) Designated Contracting States:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE

Designated Extension States:

AL LT LV MK RO SI

(72) Inventors:

- Crestini, Paolo
10137 Torino (IT)
- Povero, Mario
14010 Celle Enomondo, AT (IT)

(71) Applicant: Federal-Mogul Sealing Systems S.p.A.
10034 Chivasso (IT)

(74) Representative: Spandonari, Carlo, Dr. Ing.
Spandonari & Modiano s.r.l.
corso Duca degli Abruzzi 16
10129 Torino (IT)

(54) Gasket for spigot joints in exhaust tubes of internal combustion engines

(57) The gasket comprises a tubular sleeve of a thin steel plate. The gasket is slipped over a spigot end of a first tube, which is then inserted in the expanded socket

end of a second tube. The sleeve has retaining lips at its opposite ends, and a peripheral salient bead around its middle portion.

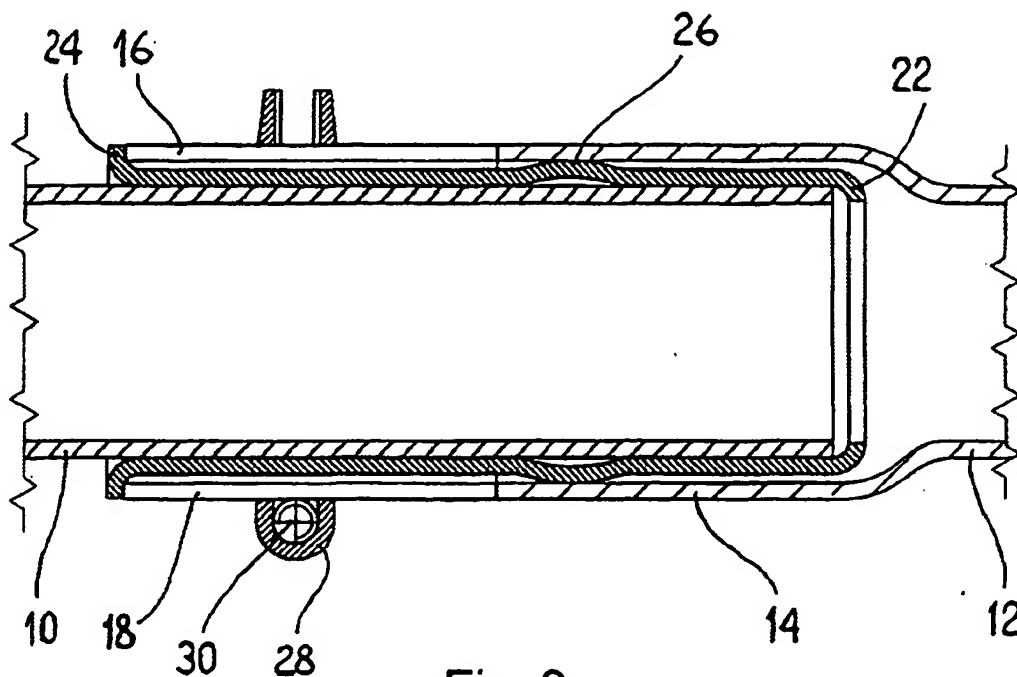


Fig. 2

bead. Also, the out-turned lip, although desirable, could be dispensed with.

Claims

5

1. A gasket for spigot joints in exhaust tubes of internal combustion engines, wherein a spigot end of a first tube is inserted in the expanded socket end of a second tube, characterized in that the gasket comprises a tubular sleeve of a thin plate, for insertion between the spigot and the socket, having at least one peripheral bead in an intermediate position between its ends, and a first retaining lip projecting inwardly at one end of the sleeve. 10 15
2. A gasket for spigot joints according to claim 1, characterized in that said first retaining lip is made by roll forming from a tubular sleeve having a cylindrical end. 20
3. A gasket for spigot joints according to claim 1 or 2, characterized in that it is further provided with a second retaining lip, projecting outwardly at the opposite end of the sleeve. 25
4. A gasket for spigot joints according to claim 1, characterized in that said second retaining lip is also made by roll forming from a tubular sleeve having a cylindrical end. 30
5. A gasket for spigot joints according to any of claims 1 to 4, characterized in that said salient bead on the sleeve is made by roll forming. 35
6. A gasket for spigot joints according to any of claims 1 to 5, characterized in that said sleeve is made from tubing obtained by roll forming of flat thin metal plate and welding or braising of the adjacent opposite sides. 40
7. A gasket for spigot joints according to any of claims 1 to 6, characterized in that said sleeve is made of steel plate. 45
8. A gasket for spigot joints according to any of claims 1 to 6, characterized in that said sleeve is made of stainless steel plate.
9. A gasket for spigot joints according to any of claims 1 to 8, characterized in that the metal plate of said sleeve is 0.1 to 0.4 mm thick. 50

55

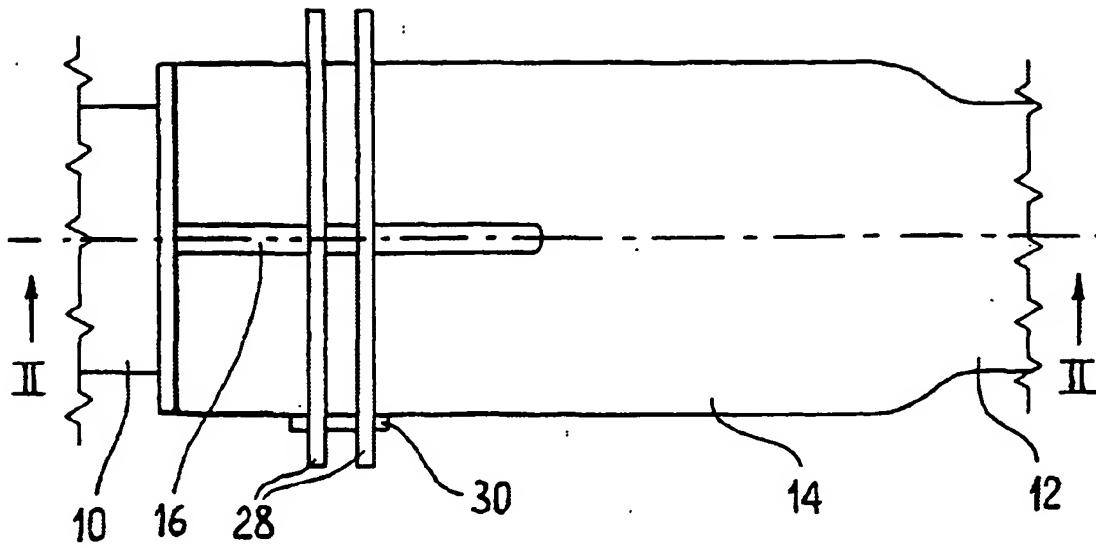


Fig. 1

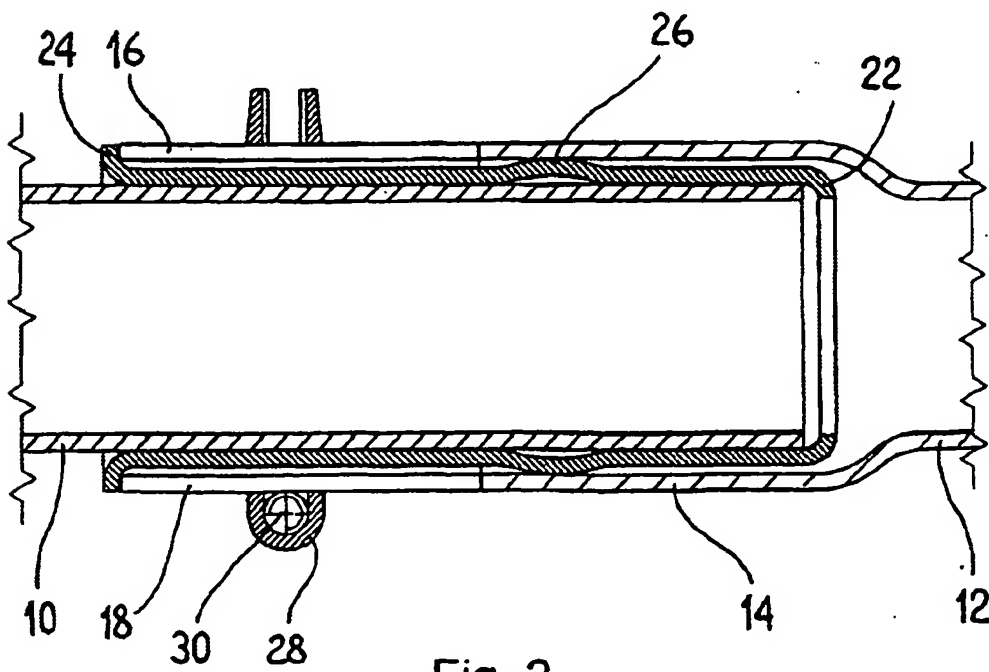


Fig. 2



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 83 0785

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
|--|---|-------------------|--|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (INCL.7) |
| A | DE 26 12 828 A (VOLKSWAGENWERK AG) 29 September 1977 (1977-09-29) * page 2, paragraph 1 - paragraph 2 * * page 3, paragraph 2 - page 4, paragraph 3; figure 1 * | 1 | F01N7/18 |
| A | US 4 270 689 A (CANFIELD) 2 June 1981 (1981-06-02) * abstract * * column 3, line 47 - column 4, line 21; figures 1-3 * | 1 | |
| A | DE 92 13 063 U (H.J.S. FAHRZEUGTEILE-FABRIK GMBH) 26 November 1992 (1992-11-26) * page 1, paragraph 1 * * page 3, paragraph 7 - page 4, paragraph 4; figures 1,2 * | 1 | |
| A | DE 88 03 199 U (OSKAR PURUCKER MASCHINENBAU LANDTECHNIK) 5 May 1988 (1988-05-05) | | |
| The present search report has been drawn up for all claims | | | TECHNICAL FIELDS SEARCHED (INCL.7) |
| | | | F01N |
| Place of search | Date of completion of the search | Examiner | |
| THE HAGUE | 24 May 2000 | Van Zoest, A | |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p> | | | |

EPO FORM 1505 (01/95) (P.0401)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 83 0785

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24-05-2000

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| DE 2612828 | A | 29-09-1977 | NONE | |
| US 4270689 | A | 02-06-1981 | NONE | |
| DE 9213063 | U | 26-11-1992 | NONE | |
| DE 8803199 | U | 05-05-1988 | NONE | |